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ABSTRACT

A. J. McCaffrey, in this paper, offers tentative predictions about the future of the book as an educational medium. He traces the history of the educational book from its beginnings in the Colonial days when it was a vehicle for the Christian religion, to its central role today in the instructional process. The educational book is economical, needs no equipment, is so flexible that it can be used in classroom, library and home; it is the most effective way to preserve sequentially ideas, concepts, facts, generalizations and abstractions relevant to a subject area. Thus it has certain unique characteristics, which fact suggests that it will be around for a long time supplementing and coordinating all the other media of instruction available to us today and in the future. (GO)

The Prospect for the "Book" as an Educational Medium

by Austin J. McCaffrey*

In assessing the future role of the book as an instructional tool, it is necessary first to recognize that any predictions made in 1968 might well have to be revised several times by the end of the century. We live in an era in which what today is undreamed of is tomorrow's headlines, and next year's commonplace. This paper, then, will consider the prospect for the book within the framework of assumptions currently held as to future developments in educational technology and in society as a whole. For the purposes of the discussion "book" refers to educational books used in a formal program of instruction in elementary and secondary schools, colleges and universities. It includes teacher's manuals, workbooks, supplementary materials, paperbound books, children's bocks, reference materials such as encyclopedias, atlases and dictionaries used in the classroom and school library. We would also encompass those printed materials of instruction employed in certain adult instructional programs and in pre-school programs. Many educational books produced primarily for U. S. students are marketed throughout the world. Others are translated into the principal languages of the world as well as into local dialects.

Since Colonial days, educational books have been a staple and central item in the instructional process. The basic philosophy of the early schools was to teach the youngsters to read so they could study the Bible. In order to propagate the gospel and to perpetuate for posterity the principles of the Christian religion, the primitive Church established schools and instructed the pupils by asking questions, receiving answers, and offering explanations and corrections concerning the points of the new religious faith.

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The hornbook was the first instrument used by the children when they entered school. This was a small, wooden, paddle-shaped implement. A sheet of paper, with the alphabet, numerals, the Lord's Prayer, and other reading matter was pasted on the blade and the whole was covered with sheets of transparent horn. Next came the Primer, the use of which can be traced back to the Middle Ages. The one most commonly used in the early American schools was The New England Primer. It has been estimated that three million copies were printed. The Primer contained a rhymed alphabet and an outline of Puritan theology.

The advent of the spelling book indicated the growing secularism of American education. Besides the alphabet and spelling exercises, it had a short catechism, prayers, psalms, writing copies and a list of "hard words alphabetically arranged and sensibly explained." Noah Webster prepared the most famous speller and most widely sold of American schoolbooks, The American Spelling Book, in 1783. The Spelling Book continued in use for more than a century.

Gradually as the country developed, more books became available to students, although until well into the 19th Century textbooks with different presentations of subject matter were occasionally used in the schools by students in the same class.

In general the earlier texts did not require much pupil activity except memorization and formal application of rules. The earliest rhetoric books required little writing; physics and chemistry texts did not require pupil experimentation until after 1875, and rarely did zoology texts imply laboratory work. Botany books asked for student activities earlier than was true in the other sciences. Usually it was suggested that the students gather and analyze plants and flowers and keep the samples in books.

Jedidiah Morse's Geography Made Easy and C. A. Goodrich's History of the United States, brought out in 1822 are examples of textbooks in new fields. Effort was made to make books more attractive and useful to children. Better paper, clearer type, more pictures, and more interesting reading material became the rule. Toward the middle of the 19th Century graded readers began to appear. The McGuffey Readers are doubtless the most famous of these. Gradually the concept of graded textbooks was accepted.

With the increase in enrollment brought by the expansion of free public education, same courses of study, the improvement of teaching procedures, and the separation of pupils into rooms and grades, it became necessary to have uniform textbooks in each grade and in all schools under the same jurisdiction. Research studies inaugurated at the beginning of this Century provided new knowledge about how children grow and the way they learn, enabling textbook publishers to build books specially designed for the needs of the students. Four major influences characterized the modern textbook: (1) child psychology, (2) the improvement of printing and binding, (3) research by authors and publishers, and (4) textbook publication as a specialized industry.

As the colleges and universities urged the need for teachers to know child psychology, methodology of teaching, individual differences and testing procedures, emphasis in textbooks shifted from subject matter to the learning process. More attention was given to color, illustrations, size of type and quality of paper.

The second half of the twentieth century has witnessed dramatic advances in educational publishing. Discoveries made during World War II in the various military training centers, together with Russian scientific achievements in the late fifties, spurred revisions in curriculum content and school organization.

The areas of mathematics, physical sciences and modern foreign languages were the first to receive the concentrated attention of scholars and scientists. For the first time, university personnel concerned themselves with pre-collegiate reform. Their expert knowledge of the subject areas was important in effecting a complete reorganization of curriculum content.

The early curriculum groups developed their materials primarily for use by college-oriented students. It was, after all, an attempt to rapidly upgrade our scientific and technical competence in order to compete on an equal basis in the world. These curriculum revisions have received widespread acceptance in the schools. Soon other subject area specialists began to examine their disciplines with regard to teaching and learning. English teaching is being subjected to close scrutiny as groups study various models of instruction. Some fifty studies were initiated in the social studies ranging from experimenting with presenting an individual discipline at a selected grade level to an integrated K-12 curriculum. The establishment of the Arts and Humanities Foundation has given impetus to curriculum studies in these areas.

Curriculum structure is also changing to take into account individual needs of students. Courses are being designed to accommodate varying rates of learning. Materials on non-Western civilizations are being included in social studies courses. English is being taught as a second language in the primary grades to students from non-English-speaking homes. The contribution of minority groups to the development of the nation is receiving added coverage in American history courses.

The organization of the schools has also changed as educators recognize the need for individualizing instruction. The ungraded schools are one way of encouraging a student to proceed at his own pace through a particular course

of instruction. Team teaching allows for enough flexibility so that students are exposed to large group lectures and can also obtain individual assistance. Pre-school programs such as Headstart are being introduced, particularly in the urban areas, as a result of research indicating that a child's early years are critical in establishing learning patterns.

Educational books, too, changed during this period. When the scholars reorganized the subject matter and approach to instruction, new books were needed. Since the basic approach to teaching used by the curriculum groups rejected rote learning, school books reflected this by emphasizing the discovery method, exposing the student to concepts and ideas rather than facts to be memorized. New theory called for more depth coverage of a subject, encouraging the student to explore and experience the many facets of the area. When a subject was introduced at a lower grade level, publishers had to develop appropriate materials. Interest in the needs of disadvantaged youth required books providing low skill achievement with high interest motivation; multi-level texts which allow students of varying ability in the same classroom to begin, each at his own proficiency level and to progress as fast and as far as his individual capabilities will allow. Publishers contracted with authors of non-Western countries to write books about their native lands. Both supplementary materials and core textbooks have increased their coverage of the minority groups and their contributions to the development and growth of America.

Introduction of technological aids into the classroom was responsible for the production of books to accompany educational television courses and books for programmed instruction. In many cases, publishers have developed systems of instructional materials which include both printed materials and audio-visual aids. Often publishers will work with motion picture companies to

develop films or filmstrips to accompany the textbook. Others will arrange for slides or transparencies. In some cases it is a cooperative arrangement, in others the publisher produced his own materials. Elementary science books come with individualized equipment to conduct appropriate experiments. Foreign language texts might be accompanied by films, filmstrips, tapes and records to reinforce the child's audio and visual impressions. Workbooks, programmed books, special-purpose equipment for reading instruction, and planetarium instruments may all be part of a publisher's catalog.

Continuing research by the industry suggests changes in size, paper and type of illustrations. One company produced a history textbook in four individual volumes for easier student use. Another issues a weekly supplement to an economics text in order to keep data current.

Paperbound books are in widespread use in the schools, both as textbooks and as supplementary material, as well as in the school and classroom libraries.

In reviewing these developments in educational publishing, it is apparent that the textbook can no longer stand as the single instructional tool, the sole source of knowledge on a particular subject, that it once was. It does however remain the most effective way to sequentially present the ideas, concepts, facts, generalizations and abstractions relevant to the subject area. The textbook presents data; explains the relationships among the data; provides charts, graphs, drawings, photographs to demonstrate data or relationships; and provides opportunities for use and practice of data and concepts through study questions, tests and exercises. The textbook provides the means of interaction between reader and content; permits contiguity of text and graphic illustration. It is the one instrument which can be used in either group or individual instruction. The traditional format of the textbook may be modified

and satellite materials introduced, but as Mark Van Doren has written: "It is hard to imagine this country without school books ... From the first primer to the latest textbook in the rarest science .. school books have maintained a central, controlling position in our common life."

In addition to changes in the products of publishers, methods of production have improved since the time when an individual author, usually a teacher, wrote the textbook, had it printed and marketed it himself in the surrounding area. Today, in the elementary and secondary area, it is virtually impossible to find a single textbook by a lone author. Instead, you will find large teams of authors, along with consultants, advisors, researchers, and academic and professional specialists who are engaged in conceiving and planning and developing educational materials. These large teams of specialists are together for a number of years to work on one particular series, with drafts classroom-tested and rewritten. Since the time involved in the development of text materials varies between three and eight years, an editor must be constantly alert to changes in the subject area which necessitate content changes in the materials in preparation. Publishers are involved in increased experimental development and research, usually carried on jointly with educational research centers and with institutions of higher education, often using existing classrooms as laboratories. Another change is the increased use of professional educators in developing materials that are for the in-service use of teachers, such as the teachers' guides and manuals. Publishers employ professional field consultants to be sure that teachers are familiar with how to use the new materials most effectively.

College textbook publishing is quite different from elhi publisning. The wide diversity among institutions of higher education and the independence

of the college professor in determining what is to be taught and how it is to be taught is well established. College books are in large measure the work of the author. His manuscript, usually with some technical assistance from the editor, becomes the book. It may be widely adopted or used only in a few institutions. It may be the basic course of study or a reference work used in conjunction with other materials. Usually the number of copies published is small compared to the larger runs at the elementary and secondary school level. Nevertheless many of these books are distinguished works and contribute valuable knowledge to highly specialized subject matter disciplines or are used in research undertakings. Thousands of university scholars have been able to combine writing with their teaching and research. In this way, college publishing has provided an opportunity for ideas to be expressed, developed, and disseminated.

Book publishing is one of the fastest growing industries in the world. In many countries government expenditures for education are beginning to exceed those for the military. A desire to keep current, to develop new skills, and simply to acquire knowledge encourages people everywhere to read more books. The Annual Statistical Survey of the American Educational Publishers Institute reported in 1967 sales of 95;525,000 textbooks, both hard bound and paperbound, and 131,900,000 units of workbooks and objective tests for elementary grades. In high schools, total sales were 44,290,000 copies of both hard bound and paperbound textbooks and 21,170,000 units of workbooks and objective tests. Total number of units sold in college was 63,655,000 hard bound and paperbound and 5,970,000 workbooks.

The future role of the book will be influenced by many factors outside of the publishers scope. State laws affecting the adopting of textbooks are a direct determinant. In this country, twenty-three states adopt elementary textbooks at the state level and 18 states adopt secondary textbooks in the

same manner. The procedures of selection and adoption vary, but generally the books are chosen by the State Board of Education or the State Textbook Commission. The number of books selected for each subject and grade ranges from one to six. These groups also determine the length of time the books will be used. The cycle may be four, five or six years, with a provision enabling the state to renew the contract for up to three years.

Teacher training in the coming years will have an influence on how the educational books will be used in the classroom. The teacher will remain the most important ingredient in the learning process. Interraction between instructor and student is essential, no matter what educational media is employed. The use which a teacher makes of the available instructional tools will determine the role of each.

The tradition of learning from books is a long and distinguished one. We have been served well by the educational books throughout the years. Our national interests and concerns are reflected in large measure in educational books. New discussions on science and technology are disseminated through books. Such tradition is not easily discarded. Just how firmly it will be adhered to in the future will affect the use of such educational books.

Educational publishers make no attempt to discount the value of technology to the instructional process. The contributions of audio-visual aids and electronic media are well proven. They have made learning more interesting, more challenging and more effective. The range of instructional tools available to schools is impressive: slides and filmstrips, transparencies, microfilm and microfiche, recordings and transcriptions, audio-tape, radio - open and closed circuit, instructional television, motion pictures, 8mm single concept films, programmed instruction, computer assisted instruction, EVR units,

and student carrels. Such a range of devices enables a child to learn, using all his senses, or just those to which his particular system responds best. The concept of systems of instruction was generated from the vast array of technological aids. Recognition that every child does not learn in the same manner has been reinforced by the ability to offer the pupil different ways of learning.

The educational publishing industry has reacted in several ways to the changing needs of the schools. In some cases, the move was to acquire additional capital. Since 1958 twenty educational publishers offered their stock for public sale. In the area of mergers and acquisitions, over 50 transactions have taken place in the past ten years and others are in process. In some cases, two publishing firms combined forces in order to serve a larger span of the market by uniting different levels of education, producing other instructional tools, or adding trade or textbooks. In other situations, the communications and electronic firms sought out publishing houses to help them produce materials for their new means of communications. Such concerns as Xerox, IBM, Raytheon, CBS, Litton Industries, ITT, Bell & Howell and RCA have acquired publishing firms. Others such as General Electric and Westinghouse developed their own educational divisions. Other educational publishers maintained their original structure and diversified from within. Publishers acquired instructional aids to complement textbooks and which could be offered to schools as a unit. Contract agreements were drawn up whereby publishers would work with film companies to produce instructional kits.

Technology and the systems approach to learning will most likely be an integral part of the classroom of the future. The rapid expansion of knowledge available to man and the concentration of population into the already crowded urban areas has made such development both desirable and inevitable.

Already the computer has made an outstanding contribution in identifying student needs and recording achievement data; in reinforcement; and in instituting flexible scheduling systems, grading papers and standardizing tests.

To what extent the newer technological media will comprise the instructional program of the future will be determined to a certain extent by developments within society. Schools are responsive to developments in the nation which are helping to shape change. Additional changes in the structure and organization of schools with the possibility of comprehensive educational parks in some areas and decentralized school systems in others; new developments in teaching methodology; emphasis on urban education as large numbers move into metropolitan areas, with minority groups becoming majorities in the schools will all affect how the school program is presented to the student.

In any case, it is to be expected that the educational book will maintain its central role in the instructional process. The educational book has certain unique characteristics which make it the most economical tool since it needs no equipment; most flexible in that it can be used in classroom, library and home. As an instructional instrument it is the most effective way to sequentially present the ideas, concepts, facts, generalizations and abstractions relevant to the subject area. The most creative minds in the country are employed to produce the materials as scholars and specialists in curriculum work together to develop a textbook for a particular subject. The book and the machine are being brought together in the corporate structure. They can live together in the schoolroom with both comfort and distinction. The responsibility of the teacher will be to select the tools most appropriate for an individual student. There seems little doubt that the goal of

individualized instruction will require computerized techniques to achieve. The need for lifelong learning in order to keep pace with developments is evidence that information storage and retrieval is necessary. The exact form will have to await the results of experiments now underway. It is possible that educational books may take different forms in some instances in order to provide the intellectual content for technological systems.

The prospect for educational publishing is one of continued cooperation with the educators and government officials, as well as others of the community concerned with education, in solving educational problems. As other industries enter the knowledge business, they too will join in these joint efforts. The resulting instructional instruments will include the educational book in its present form, but it may also be represented by various forms of input for the electronic media.